

AMENDMENTS TO THE CLAIMS

This listing will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-44. (Cancelled).

45. (Currently amended) A multi-channel system for classifying particles according to one or more characteristics of the particles, said system comprising:

a plurality of flow cytometry units each of which is operable to classify particles in a mixture of particles by interrogating a stream of fluid containing said particles using a beam of electromagnetic radiation, wherein each flow cytometry unit comprises a sensor operable to generate a time-varying output signal indicative of at least one characteristic of the particles in the stream of fluid as the stream of fluid is interrogated by the beam of electromagnetic radiation;

said units sharing an integrated platform comprising ~~at least one of the following elements: (1) a common supply of particles; (2) a common housing; (3) a common input for controlling operation of the units; (4) a common processor for receiving and processing information from the units; and (5) a common fluid delivery system for delivering fluid containing said particles to said flow cytometry units.~~, wherein the common processor is programmed to receive the time-varying output signals from the flow cytometry units substantially continuously and to process the output signals.

46. (Original) The system of claim 45 wherein said integrated platform further comprises a common source of electromagnetic radiation.

47. (Original) The system of claim 45 wherein said particles are cells.

48. (Original) The system of claim 45 wherein said particles are sperm cells.

49. (Currently amended) The system of claim 45 wherein said integrated platform further comprises ~~at least elements (3) and (4)~~ a common input for controlling operation of the units.

50. (Original) The system of claim 49 wherein said integrated platform further comprises a common source of electromagnetic radiation.

51. (Original) The system of claim 45 wherein said integrated platform further comprises a common source of electromagnetic radiation, said common source comprising a single laser beam.

52. (Original) The system of claim 51 further comprising a beam splitting system for splitting the single laser beam into multiple beams and directing the multiple beams into optics systems of respective flow cytometry units.

53. (Currently amended) The system of claim 45 wherein said integrated platform further comprises ~~at least element (2)~~ a common housing, said flow cytometry units comprising interchangeable modules removably mounted in the housing.

54. (Original) The system of claim 45 wherein each flow cytometry unit comprises an epi-illumination optics system for interrogating a respective fluid stream.

55. (Currently amended) The system of claim 45 wherein said ~~integrated platform comprises at least element (4), and wherein~~ said processor is operable to output an indication of the fluorescence intensity measured by each unit.

56. (Currently amended) The system of claim 45 wherein said ~~integrated platform comprises at least element (4), and wherein~~ said processor is operable to output an indication of the rate at which each unit is separating particles.

57. (Currently amended) The system of claim 45 wherein said ~~integrated platform comprises at least element (4), and wherein~~ said processor is operable to output an indication of particle staining variations.

58. (Currently amended) The system of claim 45 wherein said ~~integrated platform comprises at least element (4), and wherein~~ said processor is operable to output an indication of a decision boundary used by each unit for discriminating between particles.

59. (Original) The system of claim 45 wherein said flow cytometry units are adapted to operate in parallel.

60. (Original) The system of claim 45 wherein said plurality of flow cytometry units are operable to sort the particles.

61. (Original) The system of claim 60 wherein the integrated platform further comprises a common source of electromagnetic radiation, and wherein said plurality of flow cytometry units comprises a jet-in-air droplet sorting flow cytometry unit.

62. (Currently amended) The system of claim 45 wherein ~~said integrated platform comprises at least element (4), and wherein the common processor is operable to perform at least one of the following: (1) receive and process said information in real time; and (2) receives and processes~~ said information to permit evaluation of the operation of one unit relative to another unit.

63. (Currently amended) The system of claim 45 wherein ~~each flow cytometry unit comprises a sensor operable to generate a time-varying output signal indicative of at least one characteristic of the particles, wherein said integrated platform comprises at least element (4) and said information received by the common processor comprises output the signals from the respective sensors, and wherein the processor is operable to receive the output signals as a substantially continuous stream and to process the output signals in real time.~~

64. (Currently amended) The system of claim 45 wherein said ~~integrated platform comprises a~~ common processor is operable to send control signals to the flow cytometry units ~~in real time~~ during a sorting process to adjust their operation as a function of said information received by the common processor, and wherein the flow cytometry units are responsive to the control signals.

65-80. (Cancelled).

81. (New) The system of claim 45 wherein said integrated platform further comprises at least one of: (1) a common supply of particles; (2) a common housing; (3) a common input for controlling operation of the units; and (4) a common fluid delivery system for delivering fluid containing said particles to said flow cytometry units.